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EXAMINER	
DICKEY, THOMAS L	
ART UNIT	PAPER NUMBER
2826	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/804,314	KEUPER ET AL.	
	Examiner	Art Unit	
	Thomas L. Dickey	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21,23-35 and 71-78* is/are pending in the application.

4a) Of the above claim(s) *8-17,25-31,35,77 and 78* is/are withdrawn from consideration.

5)☐ Claim(s) *24* is/are allowed.

6)☒ Claim(s) *1-7,18-21,23,32-34 and 71-76* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 11/30/06 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18,32,33,71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by WEBER ET AL. (6,364,487).

Weber et al. discloses a backlight LCD with a first light-emitting diode (source 81 includes at least one LED, note column 4 line 51) including an epitaxial structure comprising an active region sandwiched between an n-type region and a p-type region, the active region configured to emit light when forward biased (note that Niwa et al. 2002/0031153 teaches that it is an inherent property of all LEDs to have an epitaxial structure comprising an active region sandwiched between an n-type region and a p-type region, configured to emit light when forward biased); a non-absorbing polarizer 83-84 coupled to the light-emitting diode 81, the non-absorbing polarizer 83-84 transmitting light having a desired polarization orientation and reflecting light that does not have the desired polarization orientation; a randomizing element (described at column 4 lines

55-60) coupled to the active region and the non-absorbing polarizer 83-84, the randomizing element positioned to receive light emitted from the light-emitting diode 81 before the light is received by the non-absorbing polarizer 83-84 and to receive light reflected from the non-absorbing polarizer 83-84, the randomizing element at least partially randomizes the polarization state of the light; a Compound Parabolic Concentrator 82 which functions to configure (in the same way as the Compound Parabolic Concentrator applicants describe at paragraph 0056 of the specification serves to configure applicants' polarizer/randomizer to preserve overall radiance) the non-absorbing polarizer 83-84 and randomizing element to preserve the overall radiance of the light transmitted by the non-absorbing polarizer 83-84 with respect to the light emitted when the active region is forward biased; and a polarized microdisplay (described, with regard to the figure 3 device, at column 4 line 54. In an alternate embodiment Weber et al. show a polarized microdisplay as part 74 of figure 2) disposed in a path of light transmitted by the non-absorbing polarizer 83-84. Note figures 2 and 3 and column 4 lines 40-67 of Weber et al.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the in-

vention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

A. Claims 19-21,23,73, and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over WEBER ET AL. (6,364,487) in view of WEINDORF ET AL. (2002/0140880).

Weber et al. discloses a backlight LCD with all the limitations of claims 19-21,73, and 74 except that the non-absorbing polarizer is a wire grid polarizer and the randomizing element is a wavelength converting material (phosphor) disposed between the non-absorbing polarizer and the active region, or with regard to claim 23, that the device further comprise a substrate having a roughened surface disposed between the non-absorbing polarizer and the active region. Note figures 2 and 3 and column 4 lines 40-67 of Weber et al.

However, Weindorf et al. discloses a wire grid polarizer non-absorbing polarizer 106 coupled to a first light-emitting diode 126, the non-absorbing polarizer 106 transmitting light having a desired polarization orientation and reflecting light that does not have the desired polarization orientation; a randomizing element 130 coupled to the first light-emitting diode 126 and the non-absorbing polarizer 106, the randomizing element 130 positioned to receive light emitted from the first light-emitting diode 126 and reflected from the non-absorbing polarizer 106, the randomizing element 130 at least partially randomizes the polarization state of the light, and a polarized microdisplay 104 disposed in a path of light transmitted by the non-absorbing polarizer 106. With particular regard to claims 20,21, and 74 Weindorf et al. discloses that the randomizing element

130 is a phosphor wavelength converting material 130 disposed between the non-absorbing polarizer 106 and the active region. Note figures 1 and 2 and paragraphs 0029-0041 of Weindorf et al. Therefore, it would have been obvious to a person having skill in the art to augment Weber et al.'s backlight LCD with the wire grid non-absorbing polarizer and wavelength converting material (phosphor) disposed between the non-absorbing polarizer and the active region such as taught by Weindorf et al. in order to fully enable the polarized microdisplay, of which Weber et al. only sketches out the fundamentals.

With particular regard to claim 23 Weber et al. discloses an epitaxial structure comprising an active region sandwiched between an n-type region and a p-type region, the active region configured to emit light when forward biased (note that Niwa et al. 2002/0031153 teaches that it is an inherent property of all LEDs to have an epitaxial structure comprising an active region sandwiched between an n-type region and a p-type region, configured to emit light when forward biased); a non-absorbing polarizer 83-84 coupled to the light-emitting diode 81, the non-absorbing polarizer 83-84 transmitting light having a desired polarization orientation and reflecting light that does not have the desired polarization orientation (all of the aforementioned being as recited in section 3, above); Weber et al. does not disclose a substrate 108 (said substrate is not part of the LED comprising the active region), wherein a surface of the substrate 108 is a roughened surface (described at paragraph 0033 as a "diffuse" surface, where it is stated, "The diffuse surface of the diffuser 108 scrambles the polarization of the light

and reflects a significant portion of the light back towards the reflective polarizer") disposed between the non-absorbing polarizer 106 and the active region. Therefore, it would have been obvious to a person having skill in the art to augment Weber et al.'s backlight LCD with the wire grid non-absorbing polarizer and wavelength converting material (phosphor) disposed between the non-absorbing polarizer and the active region such as taught by Weindorf et al. in order to fully enable the polarized microdisplay, of which Weber et al. only sketches out the fundamentals.

B. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over NIWA et al. (2002/0031153) in view of WEINDORF ET AL. (2002/0140880).

Niwa et al. discloses a system comprising a first light emitting diode having an epitaxial structure comprising an active region 6 comprising at least one layer of (1,1, -2,0) or (1,0, -1,0) InGaN sandwiched between an n-type region 5 and a p-type region 7, the active region 6 configured to emit light that is at least 50%, in fact at least 80%, polarized along a first polarization orientation when forward biased. Note figures 6A-C, 14, 15, and paragraphs 0113-0123 and 0172-0187 of Niwa et al. Niwa et al. does not disclose a polarized microdisplay disposed in a path of light emitted by the active region from the first light emitting device.

However, Weindorf et al. discloses a backlight LCD with a polarized microdisplay 104 disposed in a path of light emitted by an active region from a first light-emitting device 126. Note figures 1 and 2 and paragraphs 0029-0041 of Weindorf et al. Therefore, it would have been obvious to a person having skill in the art to insert Niwa et al.'s LED

into the polarized microdisplay such as taught by Weindorf et al. in order to use Niwa et al.'s LED in a useful device. Since Weindorf et al. teaches that backlight LCDs are presently being used in hundreds of millions of consumer devices, from telephones to toasters to televisions, that are sold for billions of dollars annually, one would have been motivated to do this because even the slightest commercial advantage that might accrue from this substitution could produce a vast income.

C. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over NIWA et al. (2002/0031153) in view of WEINDORF ET AL. (2002/0140880), as applied to claim 1 above, and further in view of WEBER ET AL. (2001/0036083).

Niwa et al. and Weindorf et al. suggest a backlight LCD with all the limitations of claim 1, from which claims 6 and 7 ultimately depend. See above. In addition, Weindorf et al. discloses a second light-emitting diode 126 (note that all of Weindorf et al.'s LEDs are labeled 126 in the figures) including an epitaxial structure comprising an active region sandwiched between a second n-type region and a second p-type region, that emits light when forward biased; a second randomizing element 130 coupled to the second light-emitting diode 126 and the second non-absorbing polarizer 106, the second randomizing element 130 positioned to receive light emitted from the second light-emitting diode 126 and the second non-absorbing polarizer 106, the second randomizing element 130 at least partially randomizes the polarization state of the light; and a light-combining element 110 disposed in the path of the light emitted by the first light-emitting diode 126 and then transmitted by the non-absorbing polarizer 106 and the,

path of the light emitted by the second light-emitting diode 126 and transmitted by the second non-absorbing polarizer 106, wherein the light-combining element 110 combines the light emitted by the first light-emitting diode 126 and then transmitted by the non-absorbing polarizer 106 and the light emitted by the second light-emitting diode 126 and transmitted by the second non-absorbing polarizer 106; wherein the microdisplay 104 receives the combined light from the light-combining element 110. Note figures 1 and 2 and paragraphs 0029-0041 of Weindorf et al. Note figures 6A-C, 14, 15, and paragraphs 0113-0123 and 0172-0187 of Niwa et al. Niwa et al. and Weindorf et al. do not disclose a second non-absorbing polarizer coupled to the second light-emitting diode and transmitting light having a second polarization orientation that is orthogonal to the polarization orientation of the light transmitted by the non-absorbing polarizer, and reflecting light that does not have the second polarization orientation; that light-combining element 110 (which combines the light emitted by the first and second LEDs) is a polarizing beamsplitter.

However, Weber et al. discloses a highly efficient light-combining element which derives its efficiency from its ability, by combining two or more non-absorbing polarizers 54 coupled to light-emitting diodes c1 through cn-1 (the non-absorbing polarizers 54 transmitting light having polarizations orientation that are orthogonal to each other with a polarizing beamsplitter 55) to combine light having a first polarization orientation and light having a second, orthogonal polarization orientation. Note figure 1 and paragraph 0015 of Weber et al. Therefore, it would have been obvious to a person having skill in

the art to replace the light-combining element of Weindorf et al.'s backlight LCD with the polarizing beamsplitter such as taught by Weber et al. in order to increase the efficiency with which polarized light is delivered to a polarized microdisplay to thus provide a brighter display.

Allowable Subject Matter

4. Claim 24 is allowed over the references of record because none of these references disclosed or can be combined to yield the claimed invention such as an apparatus comprising an epitaxial structure comprising an active region sandwiched between an n-type region and a p-type region, the active region configured to emit light when forward biased; a non-absorbing polarizer coupled to the active region, the non-absorbing polarizer transmitting light having a desired polarization orientation and reflecting light that does not have the desired polarization orientation; and a randomizing element coupled to the active region and the non-absorbing polarizer, the randomizing element positioned to receive light emitted from the active region and reflected from the non-absorbing polarizer, the randomizing element at least partially randomizes the polarization state of the light; wherein the randomizing element is a birefringent material, as recited in claim 24.

A. Claims 34,75, and 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 18-21, and 25-34 have been considered but are moot in view of the new ground(s) of rejection.

A. With regard to claims 34, 75, and 76, Applicant's arguments filed 11/30/06 are persuasive. These claims are considered allowable, except for form. Applicant is reminded that in order to keep these claims allowable, they must only be amended as to form. A straightforward "cut and paste" amendment, substituting (for example) the exact text of claims 18 and 32 for the words "The apparatus of claim 32" in (for example) claim 34, is recommended.

B. With regard to claims 1-7, 23, 71, and 72, Applicant's arguments filed 11/30/06 have been fully considered but they are not persuasive.

With regard to claims 71 and 72 it is argued, at page 11 of the remarks, that "[I]t is unclear whether 'the source' referred to in Weber at column 4, lines 55-60, is simply the 'LED or other light source 81' or if it is the 'light source 80 [that] includes an LED or other light source 81 and a concentrator 82'" Applicant seems to be saying that on the face of things (prima facie) Weber et al. anticipates claims, but closer investigation might reveal (at least by a preponderance of the evidence) that this is in fact not the case. However, Applicant offers no evidence to establish that the claims are in fact not anticipated. Applicant seems to be concentrating solely on showing that the claims might or might not be anticipated. The examiner cannot see the progress to be made

from asserting that a prima facie case is capable of either being proven or disproved. We call it "prima facie," in the first place, in recognition of the fact that it may ultimately be either proven or disproven.

The Examiner would like to add that in the context of the claims, "randomizing element" appears to mean any physical structure that randomizes light. So far as the Examiner can determine, all physical structures randomize light to some degree. For example, stars in the sky do not twinkle of their own devise. Light from these stars passes through air (a physical structure). The air randomizes the light passing through it, causing the stars to appear to twinkle.

It is argued, at pages 11-12 of the remarks, that "Because 'the source' referred to in Weber must include the 'LED or other light source 81' it cannot be "positioned to receive light emitted from the active region before the light is received by the non-absorbing polarizer and to receive light reflected from the non-absorbing polarizer" as recited in Claim 18." Applicant freely admits, however, that Weber's "source" 80 comprises two parts, light source 81 and concentrator 82, concentrator 82 being positioned between light source 81 and polarizer 83. Being positioned between parts 82 and 83 means that concentrator 82 (which applicants admit to be part of source 80) is positioned to receive light emitted from light source 81 before non-absorbing polarizer 83 receives the light, and also positioned to receive light reflected from the non-absorbing polarizer 83.

C. With regard to claims 1-7, on page 14 of the remarks Applicant continues to insist that Niwa et al. discloses only a "semiconductor laser device" and not a light emitting

diode. Even if this were true it is moot in view of the fact (which, again, Applicant does not deny) that Niwa et al. clearly discloses a whatyamaycallit having an epitaxial structure comprising an active region sandwiched between an n-type region and a p-type region, the active region configured to emit light that is at least 50%, and in fact more than 80%, polarized along a first polarization orientation when forward biased, comprising a layer of InGaN that has both {10-10} and {11-20} planes. Applicants may, if they care to, name this whatyamaycallit a "first light emitting diode" in claim 1. They may (and have) name precisely the same whatyamaycallit an "apparatus" in claim 18. The issue of whether the thing disclosed by the reference is the same thing as the thing claimed is not capable of being resolved by merely mechanically comparing the language used in the reference and the language used in the claim. "Elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required." *In re Bond*, 910 F.2d 831,832 15 USPQ2d 1566, 1566 (Fed. Cir. 1990). quoting *Akzo N.V. v. United States Int'l Trade Comm'n*, 808 F.2d 1471, 1479 & n.11, 1 USPQ2d 1241 , 1245 & n.11 (Fed.Cir. 1986), cert. denied, 482 U.S. 909 (1987). See also MPEP § 2131.

It is further argued, at page 15 of the remarks, that "The Examiner cited n-type GaN optical guide layer 5 and p-type GaN optical guide layer 7 as being part of the claimed light emitting diode, but these layers are in fact optical guide layers that are used for semiconductor laser devices." The Examiner is not quite sure of the precise means by which to show Applicant the error implicit in that statement. One would at first think "*ip-*

sissimis verbis" would be appropriate, but it is not. Applicant literally claims n-type and p-type layers, which is identical to the terminology by which Niwa et al. disclose said layers (It is true, but immaterial, that after describing these layers as being n- and p-type, Niwa et al. further characterizes them as being "optical guides"). About the best explanation the Examiner can come up with is the analogy that a disclosure of a diamond-studded mobile phone strap (see www.bornrich.org/entry/diamond-studded-mobile-phone-strap) is also a clear disclosure of a mobile phone strap.

It is further argued at page 15 that "While Niwa states at paragraph 0041 that the semiconductor light emitting device may be a light emitting diode, this is a non-enabling disclosure and there appears to be no further disclosure of a light emitting diode." Applicant cites MPEP § 2121.01 (the section whose title is "Use of Prior Art in Rejections Where Operability Is in Question") for the notion that a disclosure that merely names or describes subject matter is insufficient, if said subject matter cannot be produced without undue experimentation. However, there is a world of difference between enabling a transgenic mouse (the subject matter of the *Elan Pharm.* case) without undue experimentation on the part of one of skill in the transgene art (the *Elan* standard) and enabling a light emitting diode without undue experimentation on the part of one of skill in the LED art. In the Examiner's opinion one of skill in the LED art, wishing to obtain an LED, would either call 1-800-728-6031, email sales@ledsupply.com, or simply visit www.ledsupply.com. If there had been a 1-800-transgenic mouse number when *Elan*

Pharm. was decided, in the Examiner's opinion that decision likely would have found that prior art disclosure to be enabled.

Applicant should also note that when non-enablement is alleged, the burden is on the party alleging non-enablement to produce evidence showing the following:

(A) The breadth of the claims;

(B) The nature of the invention;

(C) The state of the prior art;

(D) The level of one of ordinary skill;

(E) The level of predictability in the art;

(F) The amount of direction provided by the inventor;

(G) The existence of working examples; and

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The party alleging non-enablement next has burden of persuasively showing that in light of these factors, the allegedly non-enabling subject matter cannot be produced without undue experimentation. *In re Wands,* 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Applicant may, if he wishes, take up his burden of showing non-enablement of an LED at a later date. For the time being the Examiner merely notes that said burden has not yet been met.

It is further argued, at page 15 of the remarks, that "Applicant submits that there is no suggestion or motivation to combine Niwa's device with the 'active region 6 configured to emit light that is at least 50%...polarized' with Weindorf's device that includes an

enhanced diffuser reflector (EDR) 118 'that scrambles the polarization of the light' as the EDR 118 would defeat the polarizing function of Niwa's device."

In point of fact the Examiner has never suggested combining Niwa's active region 6 with Weindorf's enhanced diffuser reflector (EDR) 118. The Examiner suggests that it would have been obvious to combine Niwa's "epitaxial structure comprising an active region 6 comprising at least one layer of (1,1, -2,0) or (1,0, -1,0) InGaN sandwiched between an n-type region 5 and a p-type region 7" with Weindorf's "polarized microdisplay 104 disposed in a path of light emitted by an active region." See section 3B, above.

Applicant appears to think that a hypothetical combination of features from two or more references must combine every single one of the features found in each of the references. This is patently incorrect. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Applicant notes that "while the Examiner justifies the combination with a rather colorful description, quoted above... Applicant ... cannot locate such a teaching in Weindorf." However, a suggestion, teaching, or motivation to combine the relevant prior art teachings does not have to be found explicitly in the prior art, as "the teaching, motivation, or

suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references.... The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." Alza Corp. v. Mylan Laboratories Inc., 80 USPQ2d 1001, 1006 (Fed. Cir. 2006), citing In re Kahn, 441 F.3d 977, 987-988, 78 USPQ2d 1329, 1340 (Fed. Cir. 2006) (which, in its turn, quotes In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313,1318 (Fed. Cir. 2000)). See also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co., 80 USPQ2d 1641 (Fed. Cir. 2006) and Old Town Canoe Co. v. Confluence Holdings Corp., 78 USPQ2d 1705 (Fed. Cir. 2006).

Applicant seems to be thinking that Weindorf et al. must come out and literally say, "Minor variations of this device may prove highly valuable, because even if such a variation improves one's market share by a tiny fraction, the market is so gigantic that even a tiny fractional improvement is highly valuable." However, Weindorf et al. (read from the point of view of one familiar with the LCD display art, in light of the problem to be solved) need merely imply this. Further, the individual who actually wrote Weindorf et al.'s disclosure need not have written said disclosure with the intent to imply this. The implication would have come later, when Weindorf et al.'s and Niwa et al.'s teachings were combined with the knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole. The test for an implicit motivation would be what such a combination "would have suggested to those of ordinary skill in the art," at the

moment ("the time the invention was made") the statute sets forth as the time to test for obviousness. Perhaps in light of this fact the word "imply" is not completely apropos. "Infer" might better describe the process.

Finally, on the motivation issue, Applicant argues that the "additional effort and expense would be required to produce Niwa's specialized polarized device, and Weindorf's device, which 'scrambles the polarization of the light' using EDR 118, would defeat the polarizing function of Niwa's device."

The Examiner submits to the contrary, that in the hypothetical combination of Niwa's specialized polarized device with Weindorf's polarized microdisplay 104 and EDR 118, the "additional effort and expense" is used up on EDR 118. Niwa's specialized polarized device combines with Weindorf's polarized microdisplay 104 to produce a useful device (which furthermore meets the limitations of claims 1-5). Why would anyone waste time and money adding EDR 118 to this combination? As Applicant points out, adding EDR 118 "would defeat the polarizing function of Niwa's device."

D. On page 13, with regard to claim 23, it is argued that "Neither Weber nor Weindorf teach or suggest a light emitting diode that includes 'a substrate, wherein a surface of the substrate is a roughened surface that scatters light and that is disposed between the non-absorbing polarizer and the active region.' In fact, the Examiner noted in the Office Action, at page 6, that the substrate 108 of Weindorf 'is not part of the LED comprising the active region.'" As it happens, Weindorf et al.'s substrate 108 is not the immediate support for Weindorf's LEDs 126. It is merely a substrate (i.e., a supporting mem-

ber) that forms a part of Weindorf's overall light emitting diode structure. Claim 23 claims a substrate (i.e., a supporting member) that forms a part of the overall claimed light emitting diode structure.

Claim 23 claims a device having three main parts: 1) substrate, 2) polarizer, and 3) epitaxial structure. There is no requirement in claim 23 that the claimed substrate form the support for the claimed epitaxial structure. The claimed substrate may meet claim 23 just as easily by being the support for the claimed polarizer. The claim, as written, simply does not specify what it is that the claimed substrate supports, it simply requires that the claimed substrate be present, be roughened, and be "disposed" in a particular location relative to the other two claimed elements. Naming the claimed device a "light-emitting diode," is no substitute for specifying, in the body of the claim, a necessary relationship between constituent parts of the claimed device. As has been previously explained, claim 23, once considered allowable, was re-written into a form that removed exactly that particular "necessary relationship between constituent parts" from said claim. Once this relationship was removed, claim 23 was found to be obvious in view of prior art that suggested a "roughened" substrate, "disposed" in the proper location, that merely incidentally (insofar as the amended claim no longer mentioned this limitation) happened to support the polarizer instead of the epitaxial structure.

Conclusion

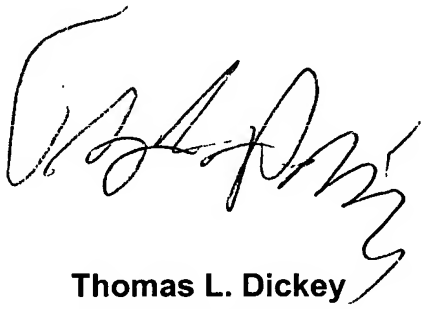
6. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Sue A. Purvis, at 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpub-

lished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thomas L. Dickey
Primary Examiner
Art Unit 2826